REMARKS

By this amendment, Applicant amends claim 21. Claims 21-24 remain pending in this application.

Applicant thanks the Examiner for discussing this application with Applicant's undersigned representative during the telephonic interview of April 1, 2009. No agreement was reached during the interview.

In the Office Action[1], the Examiner took the following actions:

> objected to the drawings;
>
> rejected claim 23 under 35 U.S.C. § 112, first paragraph;
>
> rejected claims 21 and 22 under 35 U.S.C. § 102(e) as being anticipated by JP 2001-296891 to Nogi Kazuyuki (hereinafter "Nogi") in view of Gutta et al. (U.S. Patent No. 6,931,596) (hereinafter "Gutta"); and
>
> rejected claims 23 and 24 under 35 U.S.C. § 103(a) as being unpatentable over Nogi in view of Chu et al. (U.S. Patent No. 5,778,082) (hereinafter "Chu").

I. Objection to the Drawings

Applicant respectfully traverses the objection to the drawings. In objecting to the drawings, the Office Action alleges that the recitation that "the directivity detector repeats the detection of the input sound multiple times, supplies the voice recognition unit with the output of the microphone array having the directivity set by the directivity setting unit based on a first detection result of the direction of the input sound, and conducts the subsequent detection of the direction of the input sound by using a sound

[1] The Office Action contains a number of statements reflecting characterizations of the related art and the claims. Regardless of whether any such statement is identified herein, Applicant declines to automatically subscribe to any statement or characterization in the Office Action.

other than the certain keyword," as recited in claim 23, is not sufficiently shown in the drawings. Office Action at pages 2-3. Applicant disagrees.

For example, in Figure 6[2], the directional detector 201 calculates the direction of arrival, and the directional storage 202 stores a result of the calculation. The data stored in the directional storage 202 is transmitted to the directional controller 203, as represented by the arrow from reference numeral 202 to reference numeral 203. The arrow from reference number 203 is labeled "processing sound," which represents that the output of directional controller 203 is transmitted to the recognition unit 300. Furthermore, successive processing operations are illustrated by the arrows that are depicted in Figure 6.

Applicant also again submits that claim 23 is an apparatus claim, and Figure 6 depicts the structural elements of the claimed "directional setting apparatus." The M.P.E.P. indicates that "[a]ny structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing" (emphasis added). M.P.E.P. § 608.02(d). Because the structural details of claim 23 are sufficiently depicted in the drawings, Applicant submits that the drawings meet the relevant drawing requirements and show the elements of the claims such that one could have a proper understanding of the invention. In view of the foregoing, Applicant therefore requests the Examiner's reconsideration and withdrawal of the objection to the drawings.

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[2] In making the various references to the specification and drawings set forth herein, it is to be understood that Applicant is in no way intending to limit the scope of the claims to the exemplary embodiments shown in the drawings and described in the specification. Rather, Applicant expressly affirms that it is entitled to have the claims interpreted broadly, to the maximum extent permitted by statute, regulation and applicable case law.

II. Rejection of Claim 23 under § 112, ¶1

Applicant respectfully traverses the rejection of claim 23 under 35 U.S.C. § 112, first paragraph. The Office Action alleges that the specification does not provide a written description of "how the directivity detector repeats the detection of the input sound multiple times is performed and how the subsequent detection of the direction of the input sound by using a sound other than the certain keyword is performed." Office Action at page 4 (emphases omitted). Applicant disagrees.

Applicant submits that claim 23 is supported, for example, on page 16, line 15, to page 20, line 4, in the fourth embodiment of the specification and Figure 6. As described on page 18, lines 21-25, the specification discloses that "[t]he directional detector 201 . . . can carry out a plurality of times the calculation of the direction of arrival." Applicant submits that "carry[ing] out a plurality of times the calculation of the direction of arrival" supports the recitation in claim 23 of "repeat[ing] the detection of the input sound multiple times."

As an example of further support, on page 17, lines 13-23, the specification discloses that "[t]he directional controller 203 supplies the processing sound forming the directivity for data stored in the directional storage 202 to the recognition unit 300." Applicant submits that this description supports the recitation in claim 23 of "suppl[ying] the voice recognition unit with the output of the microphone array having the directivity set by the directivity setting unit based on a first detection result of the direction of the input sound." Furthermore, on page 19, line 34, to page 20, line 4, the specification describes calculating "the direction of arrival at second or more times may be performed based on the sound signal that the utterer has uttered newly." Applicant submits that

this description supports the recitation of "conduct[ing] the subsequent detection of the direction of the input sound by using a sound other than the certain keyword," as recited in claim 23.

For at least the above reasons, Applicant submits that claim 23 is supported by the specification. Accordingly, Applicant requests that the Examiner reconsider and withdraw of the rejection of claim 23 under 35 U.S.C. § 112, first paragraph.

III. Rejection of Claims 21 and 22 under § 103(a)

Applicant respectfully traverses the rejection of claims 21 and 22 under 35 U.S.C. § 103(a) as being unpatentable over Nogi in view of Gutta. No *prima facie* case of obvious has been established for at least the following reasons.

"The key to supporting any rejection under 35 U.S.C. § 103 is the clear articulation of the reason(s) why the claimed invention would have been obvious. . . . [R]ejections on obviousness cannot be sustained with mere conclusory statements." M.P.E.P. § 2142, 8th Ed., Rev. 7 (July 2008) (internal citation and inner quotation omitted). "[T]he framework for the objective analysis for determining obviousness under 35 U.S.C. 103 is stated in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966). . . . The factual inquiries . . . [include determining the scope and content of the prior art and] . . . [a]scertaining the differences between the claimed invention and the prior art." M.P.E.P. § 2141(II). In rejecting a claim, "Office personnel must explain why the difference(s) between the prior art and the claimed invention would have been obvious to one of ordinary skill in the art." M.P.E.P. § 2141(III).

Independent claim 21 recites a directional setting apparatus including, among other things, "a voice recognition unit configured to detect a certain keyword included in a sound signal based on the input sound and set a directional determination period based on an occurrence time of a sound signal corresponding to the certain keyword." That is, in claim 21, the "direction determination period" is set based on a time when a "certain keyword" is detected, and the directivity is determined during this period. As a result, it is possible to limit the directional determination period to a short duration in order to reduce power consumption.

In contrast, Nogi accepts an input sound to conduct keyword recognition without detecting a keyword that sets a directional determination period. For example, as shown in steps A1 to A3 of Figure 3, Nogi discloses recognizing a "recognition start" command. *See* paragraphs [0014] to [0015] of the machine translation of Nogi. However, Nogi neither discloses nor suggests setting the claimed "directional determination period" based on a time when the "certain keyword" is detected. Nor does Gutta compensate for this deficiency of Nogi.

Claim 21 further recites that "the voice recognition unit recognizes a keyword different from the certain keyword for releasing the directivity set by the directivity setting unit and outputs a directivity release signal." After the directional determination period, it is therefore possible to switch the directivity and acknowledge the sound signals from various directions.

As the Office Action admits, Nogi does not disclose "releasing the directivity," as claimed. Office Action at page 5. However, the Office Action alleges that Gutta

discloses, in Figures 1 and 2, and col. 10, line 58, to col. 11, line 7, the claimed "directivity release signal." This is not correct.

In contrast, Gutta discloses a command for stopping sound recognition. See, for example, col. 11, lines 4-7, disclosing "a terminating command (such as 'stop')." However, this does not constitute or suggest that "the voice recognition unit recognizes a keyword different from the certain keyword for releasing the directivity set by the directivity setting unit and outputs a directivity release signal," as recited in claim 23.

For example, as Gutta neither discloses nor suggests setting a directivity, it follows that Gutta would have no reason to release directivity. Accordingly, for at least these reasons, Nogi and Gutta neither disclose nor suggest "a voice recognition unit configured to detect a certain keyword included in a sound signal based on the input sound and set a directional determination period based on an occurrence time of a sound signal corresponding to the certain keyword" and "the voice recognition unit recognizes a keyword different from the certain keyword for releasing the directivity set by the directivity setting unit and outputs a directivity release signal," as recited in independent claim 23.

In view of the above, the Office Action has neither properly determined the scope and content of the prior art nor properly ascertained the differences between the prior art and claim 21. Accordingly, no reason has been clearly articulated as to why the claim would have been obvious to one of ordinary skill in view of the prior art. For at least these reasons, a *prima facie* case of obviousness has not been established independent claim 21 and claim 22, which depends therefrom, and the Examiner should therefore withdraw the rejection of claims 21 and 22 under 35 U.S.C. § 103(a).

IV. Rejection of Claims 23 and 24 under § 103(a)

Applicant respectfully traverses the rejection of claims 23 and 24 under 35 U.S.C. § 103(a) as being unpatentable over Nogi in view of Chu. No *prima facie* case of obvious has been established for at least the following reasons.

Independent claim 23 recites a directional setting apparatus including, among other things, "a voice recognition unit configured to detect a certain keyword included in a sound signal based on the input sound and set a directional determination period based on an occurrence time of a sound signal corresponding to the certain keyword." As discussed above, Nogi does not teach or suggest at least similar elements of independent claim 21. Nor does Chu compensate for this deficiency of Nogi.

Independent claim 23 further recites that "the directivity detector repeats the detection of the input sound multiple times, supplies the voice recognition unit with the output of the microphone array having the directivity set by the directivity setting unit based on a first detection result of the direction of the input sound, and conducts the subsequent detection of the direction of the input sound by using a sound other than the certain keyword." The Office Action admits that Nogi does not disclose "conduct[ing] the subsequent detection of the direction of the input sound by using a sound other than the certain keyword." However, the Office Action alleges that Chu compensates for this deficiency of Nogi. This is not correct.

Chu discloses "determining the direction of the source based upon the acoustic received signals." Chu, Abstract. However, Chu neither discloses nor suggests that the keyword to be used is changed in the first directivity detection and the second directivity detection. That is, Chu also does not teach or suggest that "the directivity detector

repeats the detection of the input sound multiple times, supplies the voice recognition unit with the output of the microphone array having the directivity set by the directivity setting unit based on a first detection result of the direction of the input sound, and conducts the subsequent detection of the direction of the input sound by using a sound other than the certain keyword," as recited in independent claim 23.

In view of the above, the Office Action has neither properly determined the scope and content of the prior art nor properly ascertained the differences between the prior art and independent claim 23. Accordingly, no reason has been clearly articulated as to why the claim would have been obvious to one of ordinary skill in view of the prior art. For at least these reasons, a *prima facie* case of obviousness has not been established for independent claim 23 and claim 24, which depends therefrom, and the Examiner should therefore withdraw the rejection of claims 23 and 24 under 35 U.S.C. § 103(a).

V. Conclusion

In view of the foregoing, Applicant respectfully requests reconsideration and reexamination of this application, and the timely allowance of the pending claims.

Please grant any extensions of time required to enter this response and charge any additional required fees to our deposit account 06-0916.

Respectfully submitted,

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